



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,231	05/07/2001	Peter Krulevitch	IL-10581	3998

7590 11/22/2004
Alan H. Thompson
Assistant Laboratory Counsel
Lawrence Livermore National Laboratory
P.O. Box 808, L-703
Livermore, CA 94551

EXAMINER

SIMONE, CATHERINE A

ART UNIT	PAPER NUMBER
----------	--------------

1772

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding. .

Office Action Summary

Application No.

09/851,231

Applicant(s)

KRULEVITCH ET AL.

Examiner

Catherine Simone

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/26/04 has been entered.

Withdrawn Rejections

2. The 35 U.S.C. 112 rejection of claims 11-16 of record in the Final Office Action mailed 6/23/04, Page 2, Paragraph #3 has been withdrawn due to the Applicants amendment filed 8/26/04.
3. The 35 U.S.C. 102 rejection of claims 11 and 13-15 as anticipated by Krulevitch et al. of record in the Final Office Action mailed 6/23/04, Page 3, Paragraph #5 has been withdrawn due to the Applicants declaration filed 8/26/04.
4. The 35 U.S.C. 103 rejection of claims 12 and 16 over Krulevitch et al. of record in the Final Office Action mailed 6/23/04, Pages 4-5, Paragraph #7 has been withdrawn due to the Applicants declaration filed 8/26/04.
5. The obviousness-type double patenting rejection of claims 11-16 over Krulevitch et al. of record in the Final Office Action mailed 6/23/04, Page 5, Paragraph #9 has been withdrawn due to the Applicants terminal disclaimer filed 8/26/04.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 11-15** are rejected under 35 U.S.C. 102(b) as being anticipated by Biasse et al. (5,656,181).

Biasse et al. discloses an apparatus having a sealed microchannel therein comprising an etched substrate (Fig. 3a, #22), an etched microchannel (Fig. 3a, #28) in the etched substrate, an annealed substrate (Fig. 3a, #32) positioned on the etched substrate so that the annealed substrate covers the etched microchannel in the etched substrate (Fig. 3b), annealing the etched substrate and the annealed substrate to form an annealed microchannel (Fig. 3b, #38) in the annealed substrate over the etched microchannel (Fig. 3b, #28) in the etched substrate, and bonding the etched substrate to the annealed substrate forming a bond connecting the etched substrate and the annealed substrate, wherein the etched microchannel and the annealed microchannel comprise the sealed microchannel (Fig 3c, #48; also see col. 4, lines 8-13 and 38-60). Regarding **claim 12**, note a high temperature annealing in the 600° to 800° range when annealing the etched substrate and the annealed substrate to form annealed microchannel (see col. 4, lines 41-42). Regarding **claim 13**, note the etched microchannel in the etched substrate and the annealed microchannel in the annealed substrate form a circular sealed microchannel (Fig. 3c, #48). Regarding **claim 14**,

note the etched substrate and the annealed substrate are glass (see col. 3, line 62). Regarding **claim 15**, note the bond comprises fusion bonding (see col. 4, lines 12-22).

Furthermore, it is to be noted that the limitations “providing”, “positioning”, “annealing” and “bonding” are methods of production and therefore do not determine the patentability of the product itself. Process limitations are given little or no patentable weight. The method of forming the product is not germane to the issue of patentability of the product itself. MPEP 2113.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Biasse et al. (5,656,181).

Biasse et al. discloses an apparatus having a sealed microchannel therein comprising an etched substrate (Fig. 3a, #22), an etched microchannel (Fig. 3a, #28) in the etched substrate, an annealed substrate (Fig. 3a, #32) positioned on the etched substrate so that the annealed substrate covers the etched microchannel in the etched substrate (Fig. 3b), annealing the etched substrate and the annealed substrate to form an annealed microchannel (Fig. 3b, #38) in the annealed substrate over the etched microchannel (Fig. 3b, #28) in the etched substrate, and bonding the etched substrate to the annealed substrate forming a bond connecting the etched substrate and the annealed substrate, wherein the etched microchannel and the annealed microchannel comprise

the sealed microchannel (Fig 3c, #48; also see col. 4, lines 8-13 and 38-60). However, Biasse et al. fails to disclose a depth of about 10 μm and a width of about 20 μm for the annealed microchannel. Biasse et al. does, however, teach a microchannel having a width of 125 μm and a depth of 3 mm (see col. 6, lines 37-38). Therefore, the optimum ranges for the width and depth of the microchannel would be readily determined through routine experimentation by one having ordinary skill in the art depending on the desired end results. Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have modified the depth and width of the microchannel in Biasse et al. to be of about 10 μm in depth and of about 20 μm in width, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. *MPEP 2144.05 (II)*.

Response to Arguments

10. Applicant's arguments with respect to claims 11-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Catherine Simone whose telephone number is (571)272-1501. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Catherine Simone
Examiner
Art Unit 1772
November 2, 2004



HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

11/10/04